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THE SCIENCE OF PIANOFORTE TECHNIQUE

By WESLEY WEYMAN

CORRECT piano playing must be the direct expression of a preconceived musical idea, the reproduction of tones already heard in the mind. To express this idea exactly, one must have the technical means; and the sole object of piano technique is musical expression. Unless this is its purpose, the development of technique is an ignoble end. Thus the teacher's purpose must be to free the pupil, so that he may have an untrammeled means of expressing himself in the most exact manner.

In the past, the means of expression has been acquired by various more or less conflicting methods of study, based generally on arbitrary position, or on the development of limited kinds of touch. The method, or individual way of getting the result, consisted of arbitrary five-finger exercises to develop a certain position of the hand in connection with free movement of the fingers, through which each pupil was put, quite regardless of his individual physical or mental characteristics, or his requirements or abilities. The exercises were generally received from a venerated teacher and handed on with personal additions and interpretations. They may at first have had a logical basis, but in the transmission it was frequently forgotten; they may even eventually have been used for a purpose opposite to that originally intended. Often the teacher could not explain purpose or cause, and the pupil was forced to work unintelligently. The arbitrary finger exercises were supplemented by scales, arpeggios, octaves, etc., and by studies of Czerny, Cramer, and others, generally played with one touch, however, or varied only by quantity of tone, without consideration of the real source of the touch,—the object being fluency, speed, or evenness.

The results of this course of study were good if the pupil had a natural muscular control, or if he had patience for sufficient experiment; but conditions acquired in this manner make little mental impression and are easily forgotten. Furthermore, musical talent frequently does not go with natural muscular control, and many really musical players have never been able to express themselves with ease. Even after considerable proficiency has been acquired, there generally remain certain technical limitations, certain mysteries of touch; and even advanced and proficient players are unable to account for and to reproduce in themselves or in their pupils many subtle qualities of tone-shading which are quite obvious to the person who has analyzed their source.

There are no mysteries for one who knows the laws of tone-production. One can analyze all tone-effects of artists to their muscular sources, and approximately reproduce them. The properly equipped teacher must be able to explain the formation of all touches; to analyze directly every error, and to correct it; and to teach all technical difficulties with equal understanding and success. Nor should the pupils of a teacher be recognized by a one-sided excellence, or by an all-pervading limitation: the only legitimate distinction of a teacher's work is a general completeness of development on all lines. The preservation of the greatest individuality among his pupils, in accordance with the general laws of good taste in interpretation, together with the widest ability to express all possible shadings of tone-color, should be the test of a teacher of distinction.

A pupil should do nothing which he does not understand, or which he does not feel is right; particularly must he refuse to follow any course of study which leaves him with the discomfort of strained or fatigued muscles. Conditions of this sort must be fully and freely discussed, and no strain or fatigue must be allowed from the very beginning. Muscles which make themselves unpleasantly felt are invariably protesting against abuse. Many teachers claim that the strained feeling will wear away as the pupil advances. This fallacious claim is most often heard from those teachers who base their methods upon an arbitrary position, and force the student to develop an unnatural attitude of the hand at the expense of freedom. But this condition is in itself fundamentally wrong, and the pupil can advance freely only when it has been eliminated. Hence it demands the first attention of the teacher.

Both intelligent teacher and intelligent pupil have become dissatisfied with the waste of time, the lack of definiteness, the muscular distortions, and the general limitation of the old-fashioned system. Hence, it was at a time when the musical world was eminently ready to receive them, that the great scientists of the piano, Matthay of London, and Breithaupt of Berlin, produced their books, and thereby marked an epoch in piano-playing. By a scientific analysis, the laws which govern correct playing have been made accessible to all; and no future student of the subject can fail to take cognizance of the work of these great pioneers. Indeed we may feel that the art of pianoforte playing has now been placed on a common basis of intelligence and logic along with the other arts and sciences.

However deeply we may feel the all-importance of the intellectual or emotional qualities in the player as he produces his tones, we must admit that the actual act of tone-production is a purely physical one, that of a string being set into vibration in a certain way by a hammer. Hence this act must be governed by purely physical laws, inexorable for all, yet simple to understand and accessible to all investigators. Since, then, there can be but one right way of fulfilling the laws of tone-production, why should so many methods have developed, differing often so widely from each other, to attain this end?

When the piano issued from the clavichord period, its powers were vastly different from those of the modern concert grand. Yet the action is practically the same to-day as that devised by Cristofori in 1711. The change in musical possibility has been very great, but at the same time so gradual that performers and teachers took little cognizance of it. Thus it has resulted that many clavichord or early piano principles have been handed down and are being taught to-day on an instrument to which they no longer apply. How nearly we are connected with that period we see in the fact that three generations of teachers take us back to the period of Beethoven.

The characteristics of the early piano were very light action, small dip of key, slight singing quality, little contrast, and limited power. For these conditions, actual muscular energy of the finger would be generally sufficient. Indeed, the "quiet hand," of which we hear so much in the development of technique, was a logical and necessary condition; for unless the hand were held gently in a quiet position, it was extremely difficult accurately to gauge the light force to fit the needs of the very delicate action. But the present conditions are quite different. The modern pianoforte is characterized by a comparatively heavy action (2½ oz.), dramatic force, and varied tone-color. Actual muscular energy of the finger is now the least used of all touches, and the mere element of additional force alone revolutionizes pianoforte technique. Yet many continue to call the force used at the piano "finger energy", when it is not that at all, and still cling to the obsolete fetish of the "quiet hand," not understanding how little it is adapted to the heavy modern action, and thus ignoring the incalculable importance of the rotary muscles in developing freedom and evenness.

To approach the subject of pianoforte technique in the most logical and successful manner, we must put aside for the moment all previous ideas which we have had, even though they have produced satisfactory results. We must accept the modern pianoforte as a new instrument, and analyze it from that point of view. We must know in detail exactly what it requires of us to produce the most satisfactory results. The general ignorance of the instrument which so many musicians show, must be eradicated; by a thorough understanding of the piano, our teachings will be incontrovertibly supported or refuted by scientific facts. This merely puts the art of pianoforte playing on a dignified basis along with other arts and sciences, the fundamental laws of which are quite commonly known.

The analysis of the instrument shows that the performer's muscles must be used quite differently now from a century ago. The element of increased force required even in a *pianissimo* entirely overthrows the working principles unquestioningly accepted from a previous generation of players. Here, again, the only logical procedure will be to analyze the means which we have to employ, to learn the available muscular or weight forces with which we can fulfil the requirements of the instrument in the easiest possible manner. This is the secret of true pianoforte expression.

There can be only three available fundamental forces—muscular force of finger, muscular force of hand, and released weight of arm. The active muscular force of the arm is a dangerous factor in tone-production, as its disadvantages far outweigh its advantages; therefore, it should be avoided as far as possible. It is more than balanced in quantity and quality by the weight force of the arm. These forces can be exerted rotarily as well as vertically,—a vital point sadly neglected in the majority of piano methods. The three fundamental touches, like the three fundamental colors, are generally used in combination; but it is only by isolating these touches first from the action of other muscles or of contrary muscles, that we shall be able to use the required muscles in combination in the easiest possible manner. Thus relaxation is the basis of all correct technique—the starting-point, not the end;—and muscular condition, not position, is the vital element to be considered. Correct position will almost always be the natural and logical consequence of correct condition, but correct condition is not by any means assured by position; indeed, the arbitrary development of the correct position may frequently lead one directly away from the muscular condition necessary to express one's self correctly. Thus many methods in the past have been based on the effect, not on the cause.

With an exact knowledge of the requirements of the instrument and of the easiest possible way of fulfilling them muscularly, the teacher is able to diagnose the difficulties of the pupil, and to show him the most direct and most rapid way of correcting them. What is already good should not be changed. Frequently a real musical ability, to which a pupil has already attained, is undermined by forcing upon him the different, arbitrary hand-position of another method, when he already does a thing excellently in the way that is best and most natural for him. Of all things, the individual hand-formation of the pupil should be considered, and he should be given the greatest latitude as regards position that the desired tonal result will allow. Teaching should be constructive from the start; and recognizing what is already good in the work of a pupil, and why, the teacher should go at once to the building up, on a secure basis, of what is lacking. Many unconscientious teachers, either through ignorance or through indolence, merely continue developing the qualities which a pupil has already acquired, instead of striving to develop those which he does not possess. It is rather those things which a pupil cannot do, than the things which he can do, that should interest a thoroughly equipped teacher.

Then, after the pupil has analyzed his instrument and his muscular means of expression, the first question should be, what idea does the music express? Then, what muscular condition will produce the quality of tone to express that idea? The choice of muscular condition must depend directly on the idea to be expressed, and all practice should lead to that end. Without that analysis, it frequently happens that passages are diligently practised with a touch which leads one directly away from the muscular condition necessary to express the desired result. At first, the choice of touch is a mental act, then the touch must as soon as possible be associated with the sensation which accompanies the proper muscular condition. Any touch may always be directly located by a visible movement; when it is once acquired, the unnecessary movement may be eliminated. Above all things, it must constantly be kept in mind that often the muscular condition or the source of the energy is not visible during playing, except when it is consciously and deliberately located by an actual test. Hence, to judge a touch by what one sees is in the majority of cases misleading. The teacher judges a condition only superficially by what he sees; indeed, it frequently happens that both correct and incorrect conditions may present quite the same appearance. It is the sound, primarily, which guides the teacher, supplemented by his knowledge of what is invisibly taking place within the player's mechanism. Finally, it is only the development of the power to express a message through music, which justifies him in teaching technique at all.